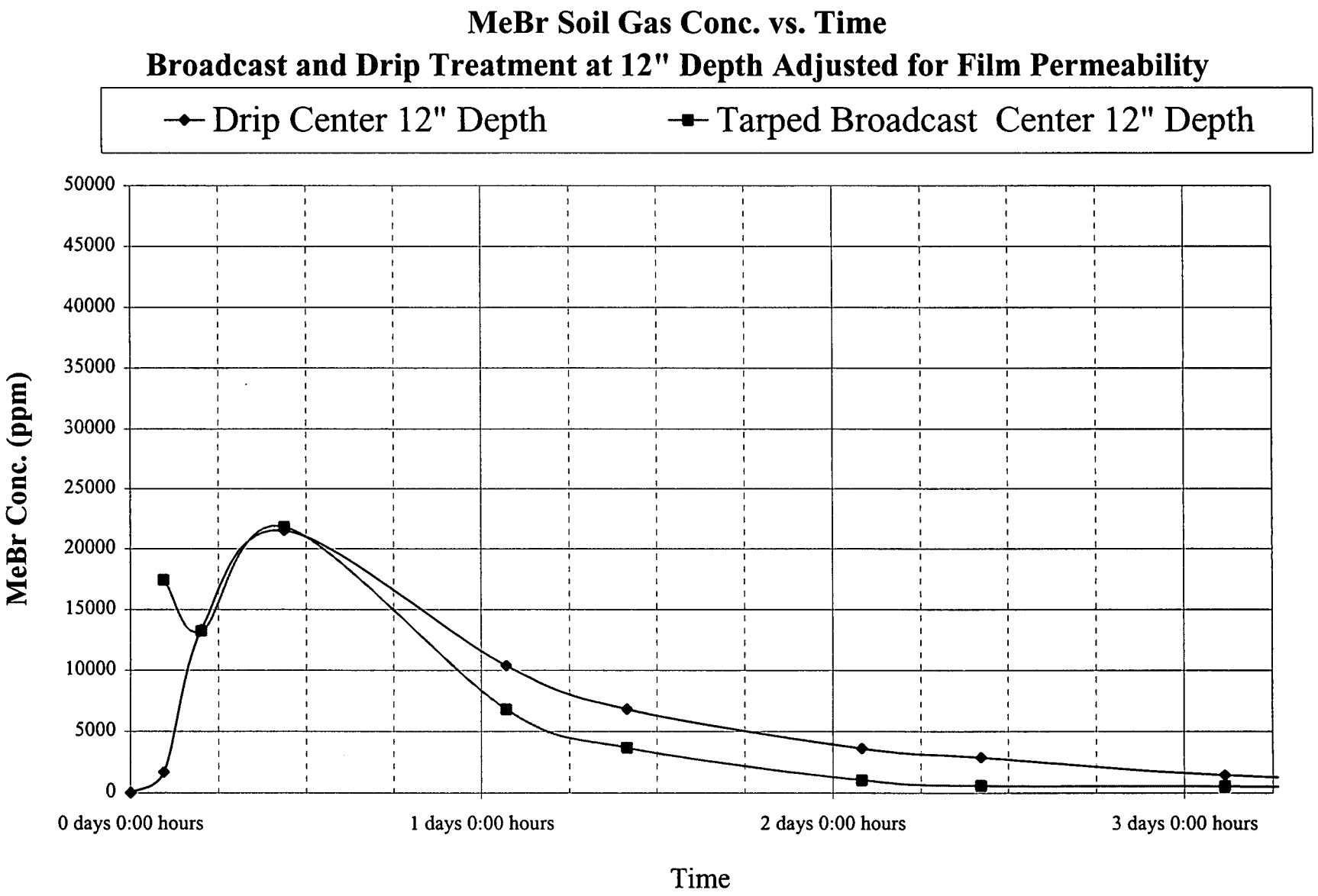
MeBr Soil Gas Conc. vs. Time
Broadcast and Drip Treatment at 12" Depth Adjusted for Film Permeability
Drip Center 12" Depth
Tarped Broadcast Center 12" Depth
MeBr Conc. (ppm)
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0 days 0:00 hours
1 days 0:00 hours
2 days 0:00 hours
3 days 0:00 hours
Time

FIG. 1

MeBr Headspace Conc. vs. Time

***Run #1* MeBr + ATLOX Surfactant + Water**

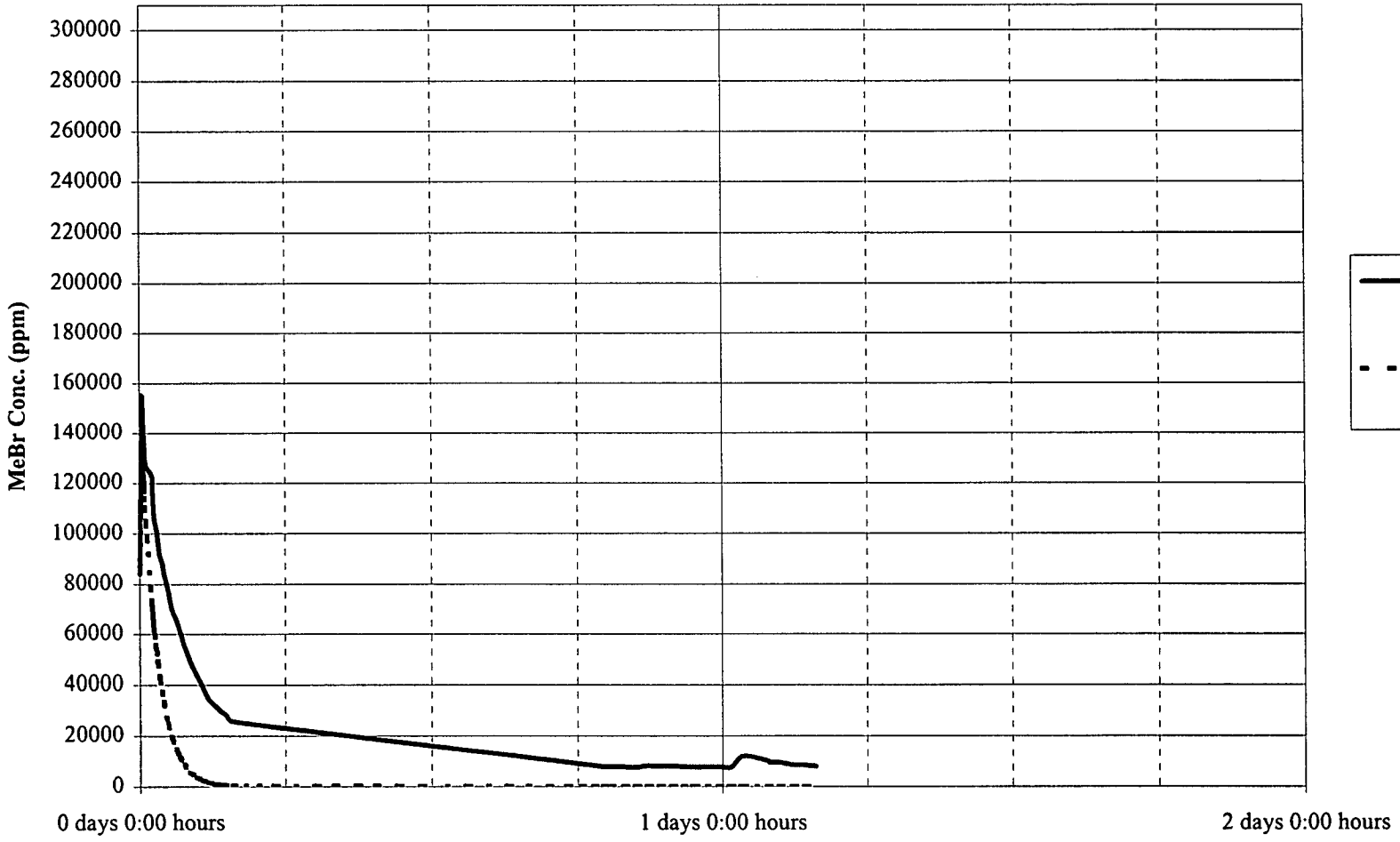

FIG. 2a

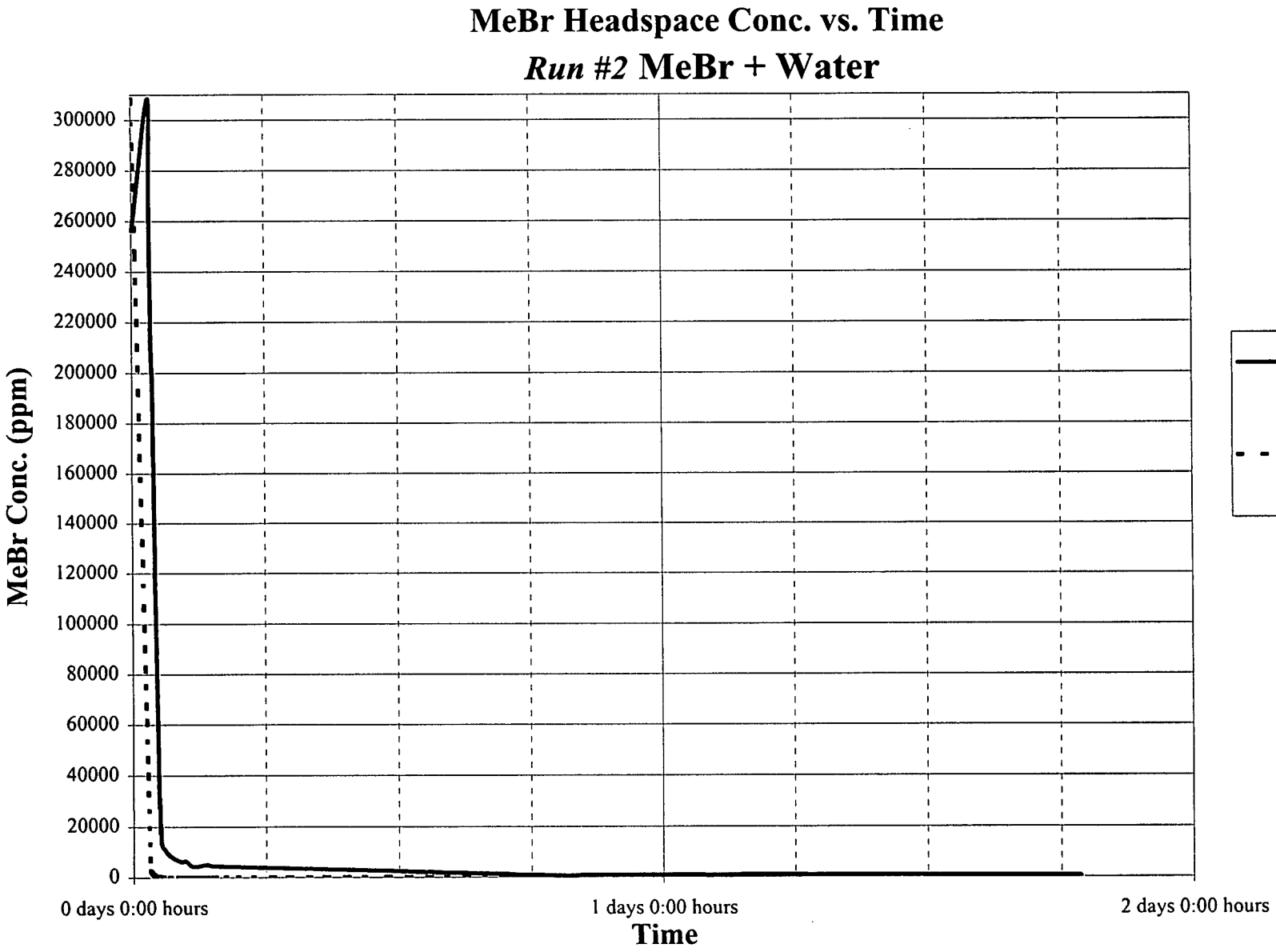

FIG. 2b

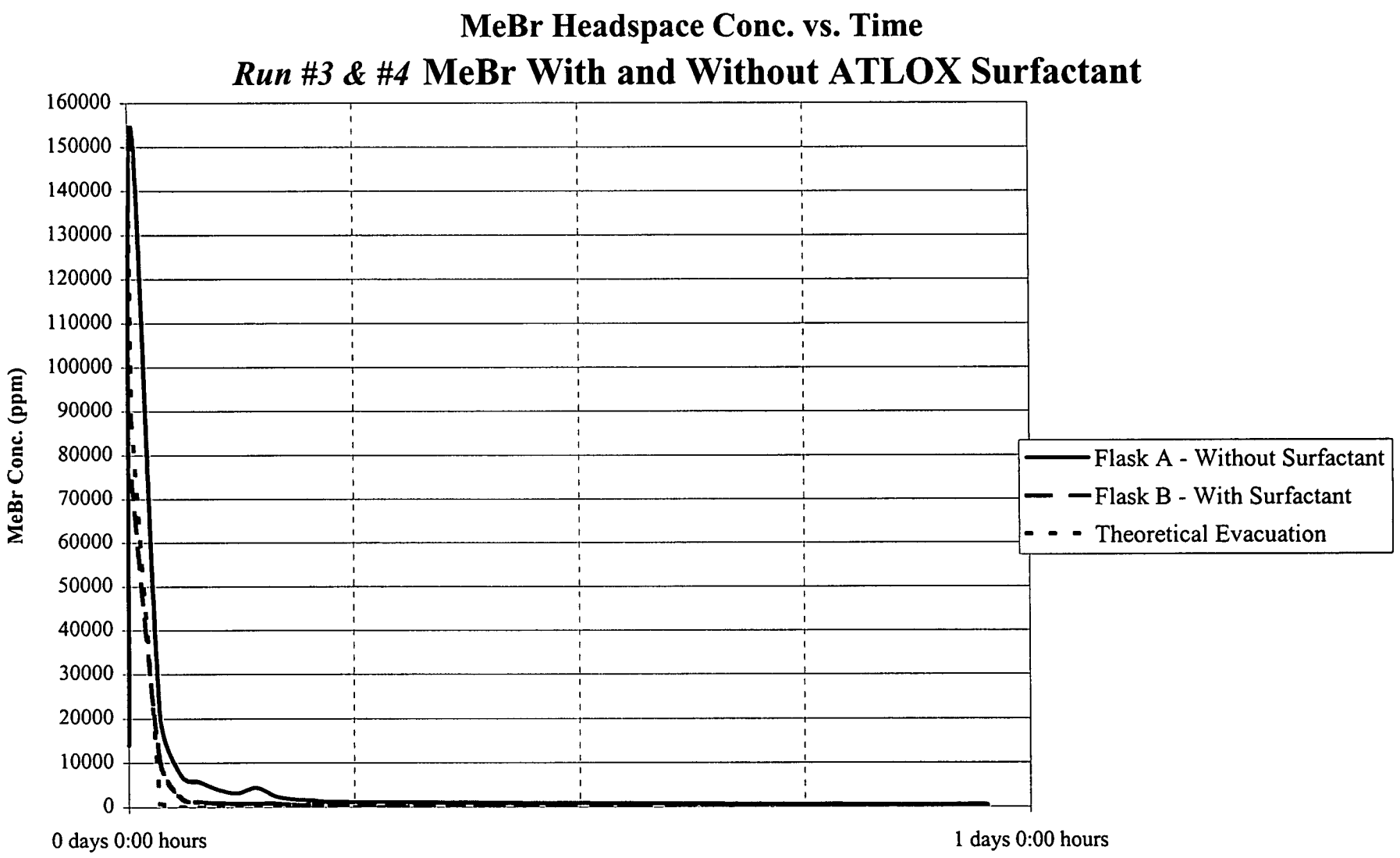
MeBr Headspace Conc. vs. Time
Run #3 & #4 MeBr With and Without ATLOX Surfactant
MeBr Conc. (ppm)
160000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
0 days 0:00 hours
1 days 0:00 hours
Time
Flask A - Without Surfactant
Flask B - With Surfactant
Theoretical Evacuation
FLASK A had 2 mL of MeBr added, FLASK B had 0.5 mL added.

FIG. 2c

Treatment of Different Types of Tubing with Chloropicrin Formulation

Tubing Type	Immediate Rx	Wall Thickness After 15 Hours	Elasticity/Strength After 15 Hours	General Appearance Integrity After 15 Hours
Black Seamless Latex	None	No change	Maintained	No effect
FEP Teflon	None	No change	Maintained	No effect
Nalgene 860 Tissue Culture Grade	None	No change	Maintained	Sticky
Manosilt	None	No change	Maintained	No effect
Tygon R3603	None	Reduced thickness	Reduced slightly	Appeared melted
Nalgene 180 Premium PVC	None	Reduced thickness	Reduced slightly	Slightly opaque, appeared melted

FIG. 3

Nematode Efficacy - Chloropicrin Drip Application of Various EC Percentages Summary of Results

	Nematode Species ¤							
Cylinder #	Root Knot (Meloidogyne)	Dagger (Xiphinema)	Citrus	Pin	Root Knot (Meloidogyne)	Dagger (Xiphinema)	Citrus	Pin
	Counts				Adjusted Counts §			
1	5	*3*	168		15	*9*	504	*0*
2	22	*4*	216	*28*	66	*12*	648	*84*
3	1	*2*	456		3	*6*	1368	*0*
4	49		338	*9*	147	*0*	1014	*27*
5	0		7		0	*0*	21	*0*
6	23		40	*4*	69	*0*	120	*12*
7	112		80	*14*	336	*0*	240	*42*
8	29		79		87	*0*	237	*0*
9	0		114		0	*0*	342	*0*
10	16		72		48	*0*	216	*0*
11	22		160		66	*0*	480	*0*
12	29		87		87	*0*	261	*0*
13	115		136		345	*0*	408	*0*
14	16		30		48	*0*	90	*0*
15	22		31		66	*0*	93	*0*
16	79		82		237	*0*	246	*0*
17	15		17		45	*0*	51	*0*
18	30		81		90	*0*	243	*0*
19	69		109		207	*0*	327	*0*
20	26		68		78	*0*	204	*0*

§ 33% extraction efficiency, measured values multiplied by 3

¤ ***No counts were obtained for Ring nematode statistical analysis.***

FIG. 4

Chloropicrin EC - Lab Tests for Weed Seed Mortality

PIGWEED

Weed Seed: *Amaranthus retroflexus* Treatment Date = 10/28/1999 Number of Seeds/Dish = 100

		Seed Germination Counts								(% Mortality)									
		Date of Count = 11/05/1999 Elapsed Time from Treatment = 8 Days				Date of Count = 11/09/1999 Elapsed Time from Treatment = 12 Days													
	Treatment	1st Count				2nd Count				1st Count				1st Count at 8 Days	2nd Count				2nd Count at 12 Days	% Mortality Above Control
Seed Age	Treatment Solution	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Mean	Rep 1	Rep 2	Rep 3	Rep 4	Mean	
NEW SEED	Control 0 ppm, 0% Emulsifier	26	29	15	20	75	66	55	75	74%	71%	85%	80%	78%	25%	34%	45%	25%	32%	0%
NEW SEED	0 ppm, 5% Emulsifier	13	9	10	14	15	16	21	32	87%	91%	90%	86%	89%	85%	84%	79%	68%	79%	47%
NEW SEED	0 ppm, 50% Emulsifier	6	2	12	4	10	4	19	6	94%	98%	88%	96%	94%	90%	96%	81%	94%	90%	58%
NEW SEED	500 ppm, 5% Emulsifier	0	3	1	4	0	3	1	4	100%	97%	99%	96%	98%	100%	97%	99%	96%	98%	66%
NEW SEED	500 ppm, 50% Emulsifier	0	2	0	2	3	6	3	7	7%	98%	100%	98%	76%	97%	94%	97%	93%	95%	63%
NEW SEED	1000 ppm, 5% Emulsifier	4	1	1	0	9	2	1	1	96%	99%	99%	100%	99%	91%	98%	99%	99%	97%	65%
NEW SEED	1000 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	68%
OLD SEED	Control 0 ppm, 0% Emulsifier																			
OLD SEED	0 ppm, 5% Emulsifier																			
OLD SEED	0 ppm, 50% Emulsifier																			
OLD SEED	500 ppm, 5% Emulsifier																			
OLD SEED	500 ppm, 50% Emulsifier																			
OLD SEED	1000 ppm, 5% Emulsifier																			
OLD SEED	1000 ppm, 50% Emulsifier																			

NEW SEED

HIGHLY SIGNIFICANT DIFFERENCE @ 99%

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Row 1	4	1.29	0.3225	0.009025
Row 2	4	3.18	0.79	0.00606667
Row 3	4	3.61	0.9025	0.004425
Row 4	4	3.92	0.98	0.00033333
Row 5	4	3.81	0.9525	0.000425
Row 6	4	3.87	0.9675	0.00149167
Row 7	4	4	1	0

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.3926	6	0.2321	74.6416539	4.547E-13	5.8807827
Within Groups	0.0653	21	0.0031095			
Total	1.4579	27				

FIG. 5a

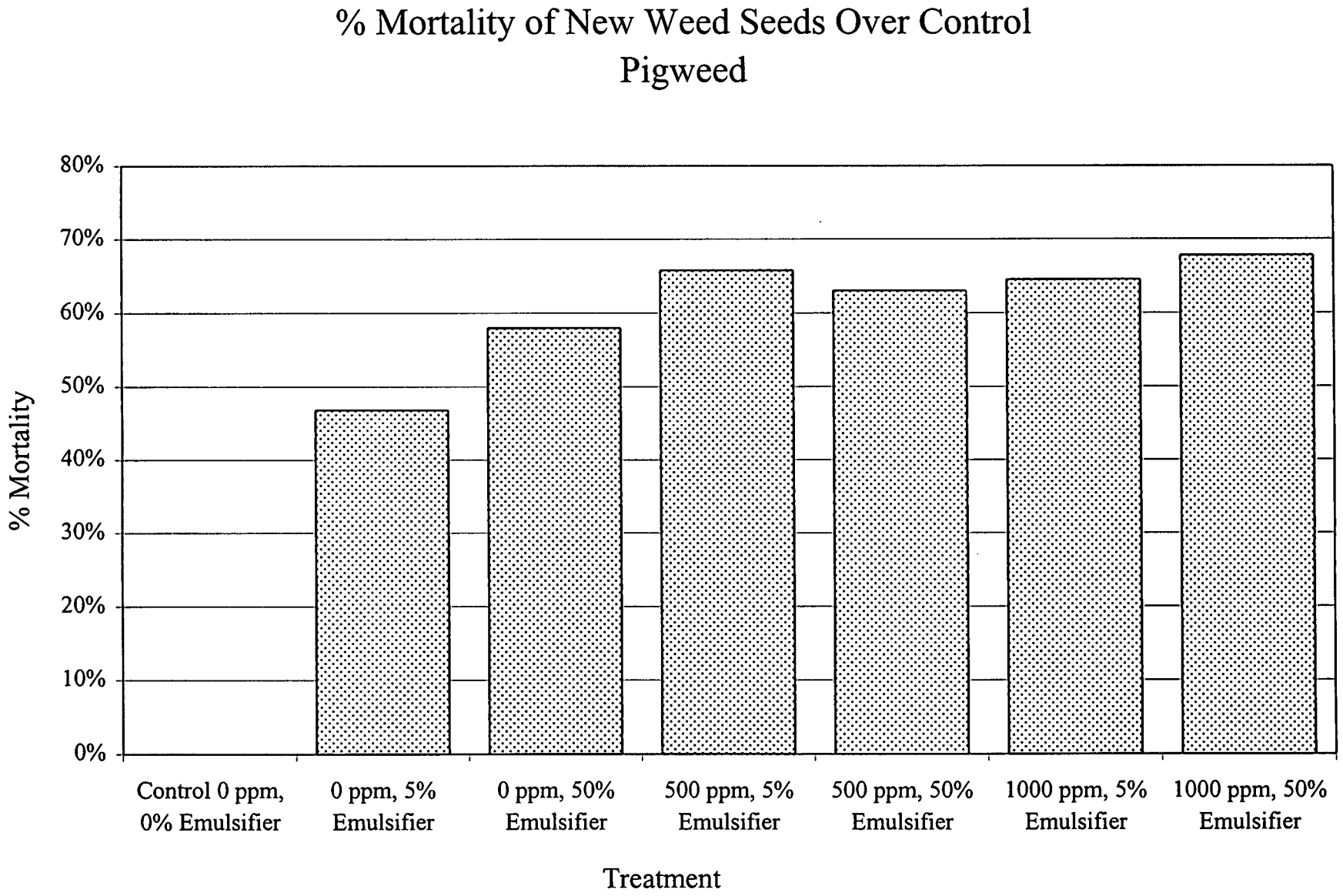
% Mortality of New Weed Seeds Over Control
Pigweed
80%
70%
60%
50%
40%
30%
20%
10%
0%
% Mortality
Control 0 ppm, 0% Emulsifier
0 ppm, 5% Emulsifier
0 ppm, 50% Emulsifier
500 ppm, 5% Emulsifier
500 ppm, 50% Emulsifier
1000 ppm, 5% Emulsifier
1000 ppm, 50% Emulsifier
Treatment

FIG. 5b

Chloropicrin EC - Lab Tests for Weed Seed Mortality

WHITE SWEET CLOVER

Weed Seed: *Meliloyus alba* Treatment Date = 10/28/1999 Number of Seeds/Dish = 100

Seed Age	Treatment Solution	Seed Germination Counts: Date of Count = 11/05/1999, Elapsed Time from Treatment = 8 Days: 1st Count Rep 1	1st Count Rep 2	1st Count Rep 3	1st Count Rep 4	Date of Count = 11/09/1999, Elapsed Time from Treatment = 12 Days: 2nd Count Rep 1	2nd Count Rep 2	2nd Count Rep 3	2nd Count Rep 4	(% Mortality) 1st Count Rep 1	1st Count Rep 2	1st Count Rep 3	1st Count Rep 4	1st Count at 8 Days Mean	2nd Count Rep 1	2nd Count Rep 2	2nd Count Rep 3	2nd Count Rep 4	2nd Count at 12 Days Mean	% Mortality Above Control
NEW SEED	Control 0 ppm, 0% Emulsifier	4	11	15	6	4	11	15	6	96%	89%	85%	94%	91%	96%	89%	85%	94%	91%	0%
NEW SEED	0 ppm, 5% Emulsifier	10	7	3	9	10	7	3	9	90%	93%	97%	91%	93%	90%	93%	97%	91%	93%	2%
NEW SEED	0 ppm, 50% Emulsifier	5	4	7	5	6	4	7	5	95%	96%	93%	95%	95%	94%	96%	93%	95%	95%	4%
NEW SEED	500 ppm, 5% Emulsifier	5	3	4	1	5	3	6	2	95%	97%	96%	99%	97%	95%	·97%	94%	98%	96%	5%
NEW SEED	500 ppm, 50% Emulsifier	5	2	1	2	7	2	1	5	95%	98%	99%	98%	98%	93%	98%	99%	95%	96%	5%
NEW SEED	1000 ppm, 5% Emulsifier	1	2	3	0	1	4	3	0	99%	98%	97%	100%	99%	99%	96%	97%	100%	98%	7%
NEW SEED	1000 ppm, 50% Emulsifier	0	2	0	3	0	13	1	5	100%	98%	100%	97%	99%	100%	87%	99%	95%	95%	4%
OLD SEED	Control 0 ppm, 0% Emulsifier	15	11	4	9	30	25	11	27	85%	89%	96%	91%	90%	70%	75%	89%	73%	77%	-3%
OLD SEED	0 ppm, 5% Emulsifier	5	7	24	33	8	8	26	39	95%	93%	76%	67%	83%	92%	92%	74%	61%	80%	0%
OLD SEED	0 ppm, 50% Emulsifier	4	10	13	18	6	12	24	27	96%	90%	87%	82%	89%	94%	88%	76%	73%	83%	3%
OLD SEED	500 ppm, 5% Emulsifier	7	2	3	9	7	2	5	14	93%	98%	97%	91%	95%	93%	98%	95%	86%	93%	13%
OLD SEED	500 ppm, 50% Emulsifier	11	7	3	5	25	15	6	9	89%	93%	97%	95%	94%	75%	85%	94%	91%	86%	7%
OLD SEED	1000 ppm, 5% Emulsifier	23	3	0	12	23	3	0	12	77%	97%	100%	88%	91%	77%	97%	100%	88%	91%	11%
OLD SEED	1000 ppm, 50% Emulsifier	0	12	3	16	0	18	4	26	100%	88%	97%	84%	92%	100%	82%	96%	74%	88%	8%

NEW SEED **No Significance**

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	4	3.64	0.91	0.00246667
Row 2	4	3.71	0.9275	0.00095833
Row 3	4	3.78	0.945	0.00016667
Row 4	4	3.84	0.96	0.00033333
Row 5	4	3.85	0.9625	0.00075833
Row 6	4	3.92	0.98	0.00033333
Row 7	4	3.81	0.9525	0.00349167

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.0130857	6	0.002181	1.79431929	0.1489903	2.5727118
Within Groups	0.025525	21	0.0012155			
Total	0.0386107	27				

OLD SEED **No Significance**

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	4	3.07	0.7675	0.007091667
Row 2	4	3.19	0.7975	0.022825
Row 3	4	3.31	0.8275	0.009825
Row 4	4	3.72	0.93	0.0026
Row 5	4	3.45	0.8625	0.007025
Row 6	4	3.62	0.905	0.0107
Row 7	4	3.52	0.88	0.014666667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.081971	6	0.013662	1.279661017	0.30875	2.572712
Within Groups	0.2242	21	0.010676			
Total	0.306171	27				

FIG. 6a

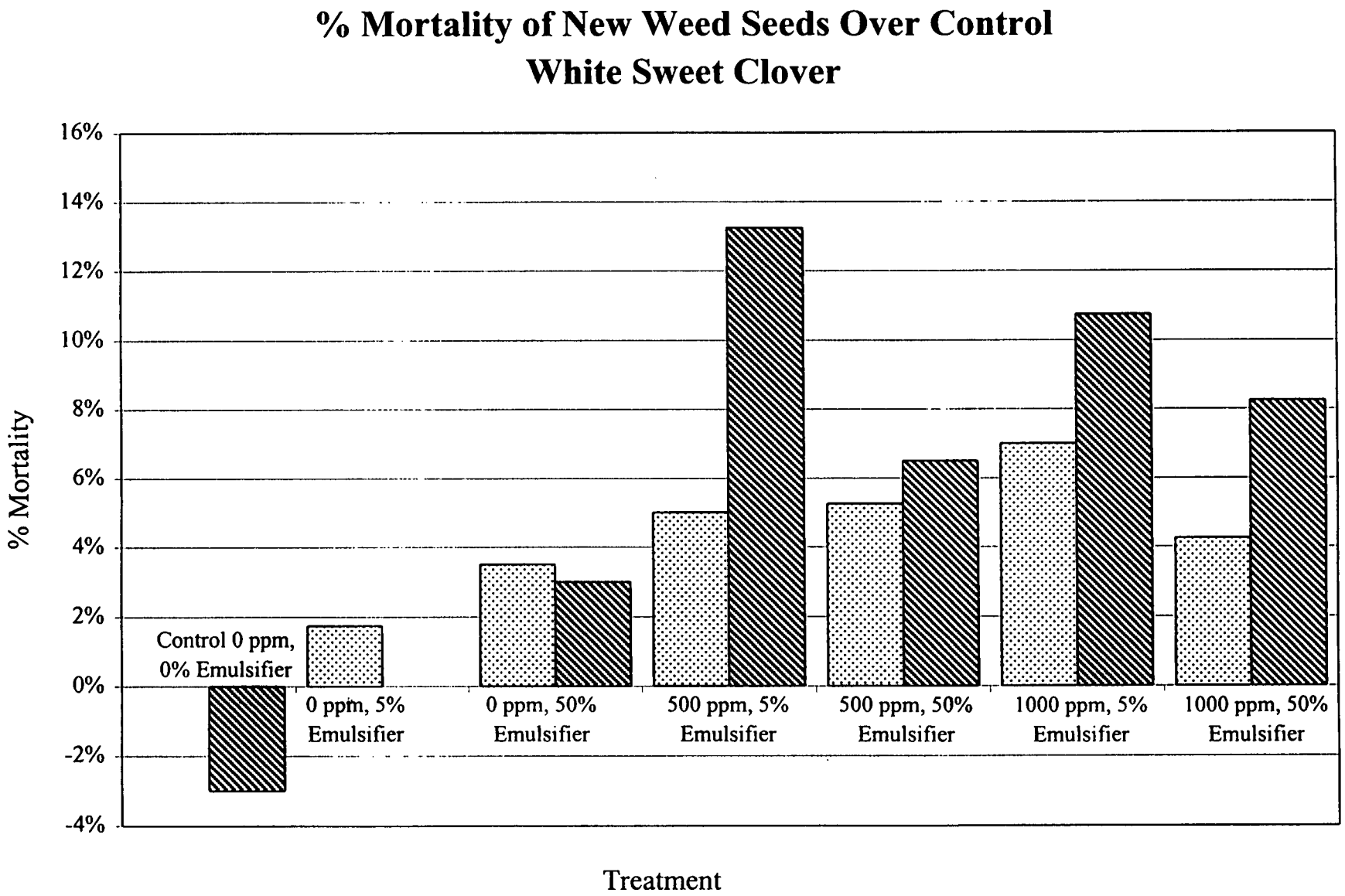
% Mortality of New Weed Seeds Over Control
White Sweet Clover
16%
14%
12%
10%
8%
6%
4%
2%
0%
-2%
-4%
% Mortality
Control 0 ppm, 0% Emulsifier
0 ppm, 5% Emulsifier
0 ppm, 50% Emulsifier
500 ppm, 5% Emulsifier
500 ppm, 50% Emulsifier
1000 ppm, 5% Emulsifier
1000 ppm, 50% Emulsifier
Treatment

FIG. 6b

Chloropicrin EC - Lab Tests for Weed Seed Mortality

WILD MUSTARD

Weed Seed: *Brassica kaber* Treatment Date = 10/28/1999 Number of Seeds/Dish = 100

Seed Age	Treatment Solution	Seed Germination Counts: 1st Count (Date of Count = 11/05/1999; Elapsed Time from Treatment = 8 Days) Rep 1	Rep 2	Rep 3	Rep 4	Seed Germination Counts: 2nd Count (Date of Count = 11/09/1999; Elapsed Time from Treatment = 12 Days) Rep 1	Rep 2	Rep 3	Rep 4	(% Mortality): 1st Count Rep 1	Rep 2	Rep 3	Rep 4	1st Count at 8 Days Mean	(% Mortality): 2nd Count Rep 1	Rep 2	Rep 3	Rep 4	2nd Count at 12 Days Mean	% Mortality Above Control
NEW SEED	Control 0 ppm, 0% Emulsifier	35	38	40	33	60	51	49	54	65%	62%	60%	67%	64%	40%	49%	51%	46%	47%	0%
NEW SEED	0 ppm, 5% Emulsifier	34	29	32	28	80	78	75	79	66%	71%	68%	72%	69%	20%	22%	25%	21%	22%	-25%
NEW SEED	0 ppm, 50% Emulsifier	28	31	29	32	81	77	70	82	72%	69%	71%	68%	70%	19%	23%	30%	18%	23%	-24%
NEW SEED	500 ppm, 5% Emulsifier	34	16	35	36	82	72	91	88	66%	84%	65%	64%	70%	18%	28%	9%	12%	17%	-30%
NEW SEED	500 ppm, 50% Emulsifier	40	26	10	24	83	76	80	85	60%	74%	90%	76%	75%	17%	24%	20%	15%	19%	-28%
NEW SEED	1000 ppm, 5% Emulsifier	30	31	18	22	81	80	70	76	70%	69%	82%	78%	75%	19%	20%	30%	24%	23%	-23%
NEW SEED	1000 ppm, 50% Emulsifier	31	11	3	41	36	13	12	41	69%	89%	97%	59%	79%	64%	87%	88%	59%	75%	28%
		Date of Count = 11/08/1999																		
		Elapsed Time from Treatment = 11 Days																		
OLD SEED	Control 0 ppm, 0% Emulsifier	0	1	0	1	0	1	0	1	100%	99%	100%	99%	100%	100%	99%	100%	99%	100%	0%
OLD SEED	0 ppm, 5% Emulsifier	2	2	0	1	2	2	0	1	98%	98%	100%	99%	99%	98%	98%	100%	99%	99%	-1%
OLD SEED	0 ppm, 50% Emulsifier	1	0	0	1	1	0	0	1	99%	100%	100%	99%	100%	99%	100%	100%	99%	100%	0%
OLD SEED	500 ppm, 5% Emulsifier	2	0	0	0	2	0	0	0	98%	100%	100%	100%	100%	98%	100%	100%	100%	100%	0%
OLD SEED	500 ppm, 50% Emulsifier	3	2	3	0	3	2	3	0	97%	98%	97%	100%	98%	97%	98%	97%	100%	98%	-2%
OLD SEED	1000 ppm, 5% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%
OLD SEED	1000 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%

NEW SEED SIGNIFICANT DIFFERENCE @ 99%

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	4	1.86	0.465	0.0023
Row 2	4	0.88	0.22	0.000466667
Row 3	4	0.9	0.225	0.002966667
Row 4	4	0.67	0.1675	0.007025
Row 5	4	0.76	0.19	0.001533333
Row 6	4	0.93	0.2325	0.002491667
Row 7	4	2.98	0.745	0.022966667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.0739357	6	0.1789893	31.52012579	1.866E-09	3.8117491
Within Groups	0.11925	21	0.0056786			
Total	1.1931857	27				

OLD SEED SIGNIFICANT DIFFERENCE @ 95%

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	4	3.98	0.995	3.33333E-05
Row 2	4	3.95	0.9875	9.16667E-05
Row 3	4	3.98	0.995	3.33333E-05
Row 4	4	3.98	0.995	1E-04
Row 5	4	3.92	0.98	0.0002
Row 6	4	4	1	0
Row 7	4	4	1	0

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.001238	6	0.000206	3.145454545	0.023238	2.572712
Within Groups	0.001375	21	6.55E-05			
Total	0.002611	27				

FIG. 7a

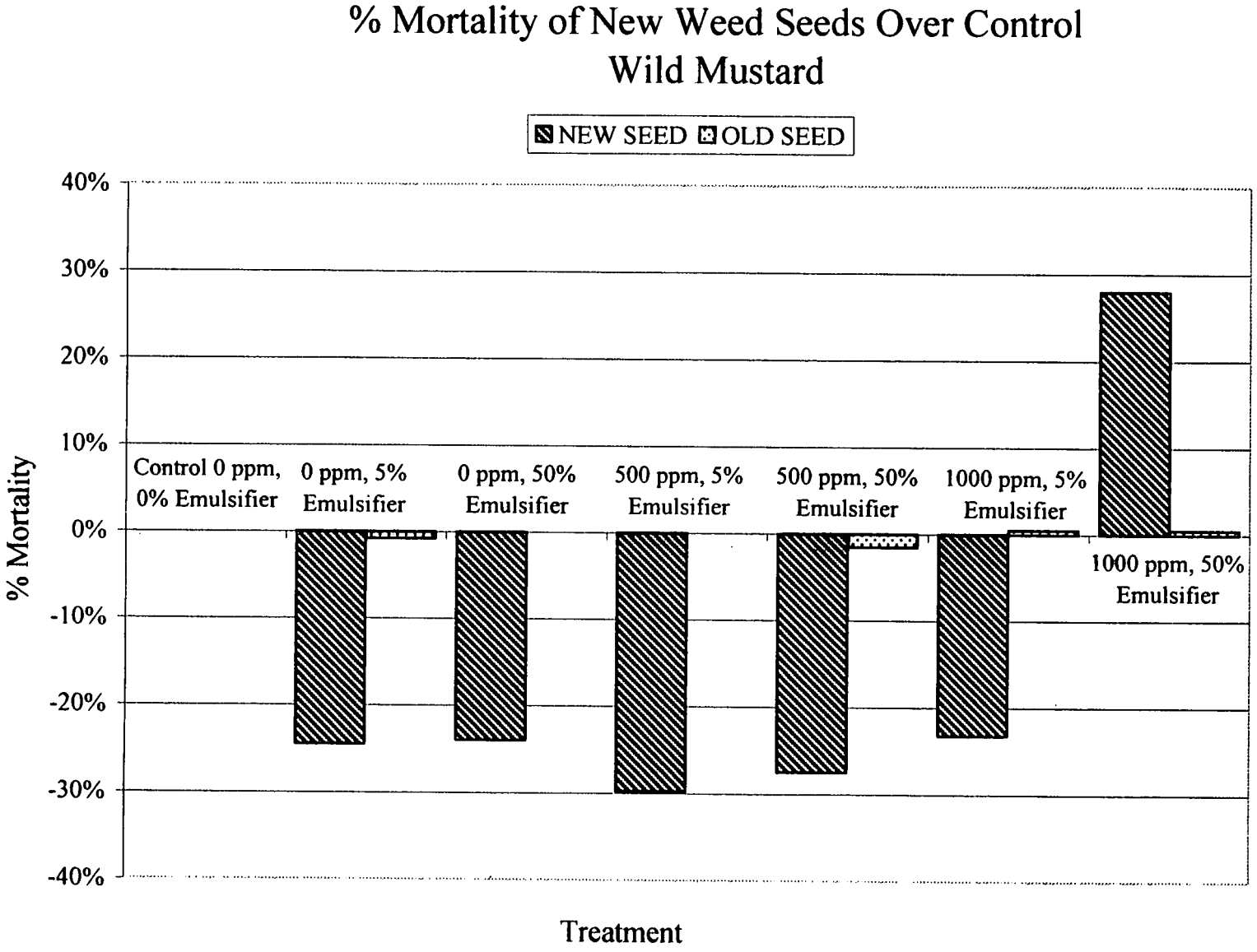
% Mortality of New Weed Seeds Over Control
Wild Mustard
NEW SEED
OLD SEED
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
% Mortality
Control 0 ppm, 0% Emulsifier
0 ppm, 5% Emulsifier
0 ppm, 50% Emulsifier
500 ppm, 5% Emulsifier
500 ppm, 50% Emulsifier
1000 ppm, 5% Emulsifier
1000 ppm, 50% Emulsifier
Treatment

FIG. 7b

Chloropicrin EC - Lab Tests for Weed Seed Mortality
YELLOW
NUTGRASS

Weed Seed: *Cyperus esculintus* Treatment Date = 10/28/1999 Number of Seeds/Dish = 100

Seed Age	Treatment Solution	Seed Germination Counts: 1st Count (Date of Count = 11/05/1999; Elapsed Time from Treatment = 8 Days) Rep 1	Rep 2	Rep 3	Rep 4	2nd Count (Date of Count = 11/09/1999; Elapsed Time from Treatment = 12 Days) Rep 1	Rep 2	Rep 3	Rep 4	(% Mortality) 1st Count Rep 1	Rep 2	Rep 3	Rep 4	1st Count at 8 Days Mean	2nd Count Rep 1	Rep 2	Rep 3	Rep 4	2nd Count at 12 Days Mean	% Mortality Above Control
NEW SEED	Control 0 ppm, 0% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
NEW SEED	0 ppm, 5% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
NEW SEED	0 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
NEW SEED	500 ppm, 5% Emulsifier	0	0	0	0	0	0	0	5	100%	100%	100%	100%	**100%**	100%	100%	100%	95%	**99%**	**-1%**
NEW SEED	500 ppm, 50% Emulsifier	0	0	0	0	0	0	0	2	100%	100%	100%	100%	**100%**	100%	100%	100%	98%	**100%**	**-1%**
NEW SEED	1000 ppm, 5% Emulsifier	0	0	0	0	1	2	0	0	100%	100%	100%	100%	**100%**	99%	98%	100%	100%	**99%**	**-1%**
NEW SEED	1000 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
		Date of Count = 11/08/1999; Elapsed Time from Treatment = 11 Days																		
OLD SEED	Control 0 ppm, 0% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
OLD SEED	0 ppm, 5% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
OLD SEED	0 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
OLD SEED	500 ppm, 5% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
OLD SEED	500 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
OLD SEED	1000 ppm, 5% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**
OLD SEED	1000 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	**100%**	100%	100%	100%	100%	**100%**	**0%**

NEW SEED **No Significance**

OLD SEED **No Significance**

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Row 1	4	4	1	0
Row 2	4	4	1	0
Row 3	4	4	1	0
Row 4	4	3.95	0.9875	0.000625
Row 5	4	3.98	0.995	1E-04
Row 6	4	3.97	0.9925	9.16667E-05
Row 7	4	4	1	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0005929	6	9.881E-05	0.846938776	0.5484524	2.5727118
Within Groups	0.00245	21	0.0001167			
Total	0.0030429	27				

FIG. 8a

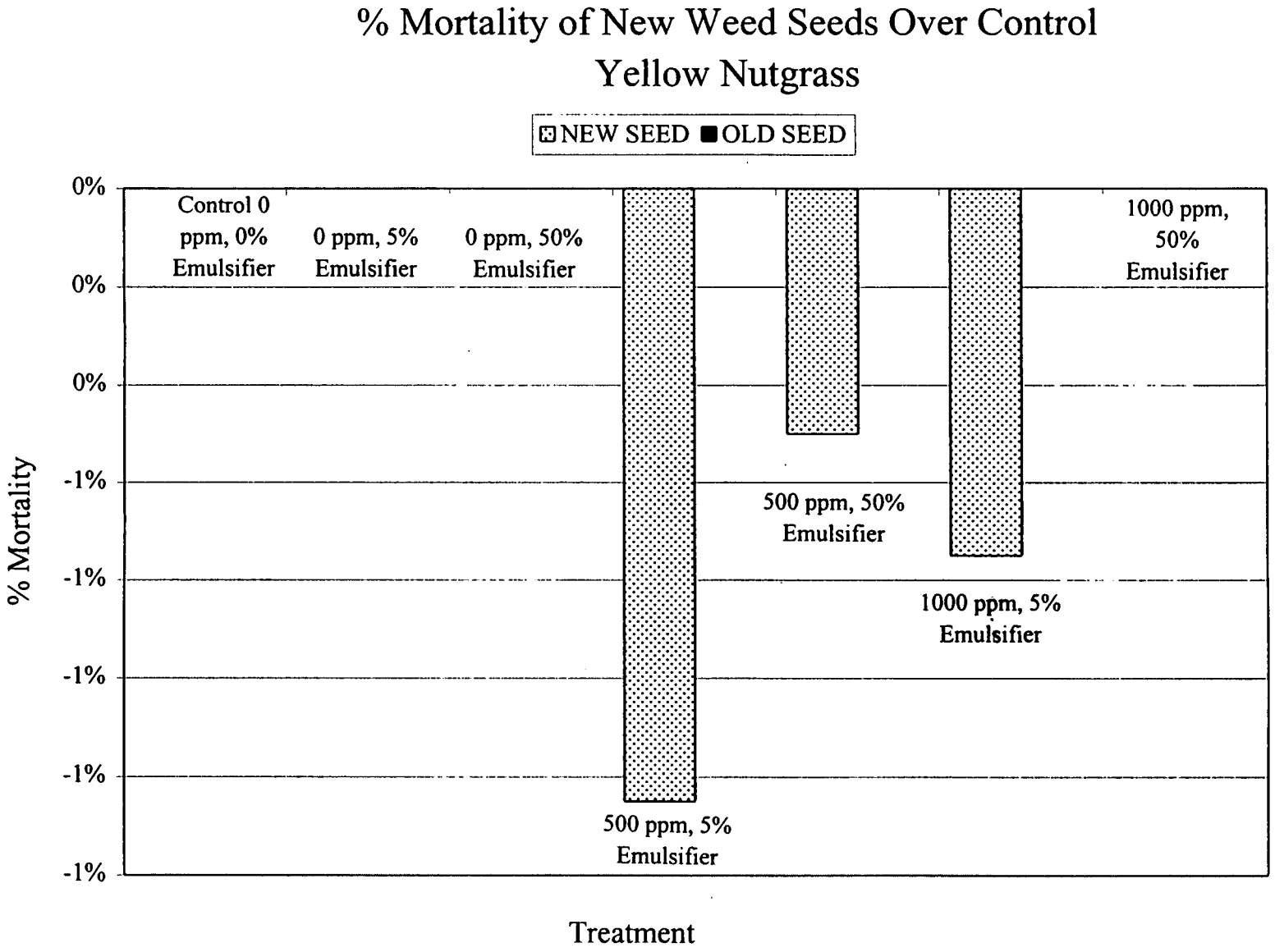
% Mortality of New Weed Seeds Over Control
Yellow Nutgrass
NEW SEED
OLD SEED
% Mortality
0%
0%
0%
-1%
-1%
-1%
-1%
-1%
Control 0 ppm, 0% Emulsifier
0 ppm, 5% Emulsifier
0 ppm, 50% Emulsifier
500 ppm, 5% Emulsifier
500 ppm, 50% Emulsifier
1000 ppm, 5% Emulsifier
1000 ppm, 50% Emulsifier
Treatment

FIG. 8b

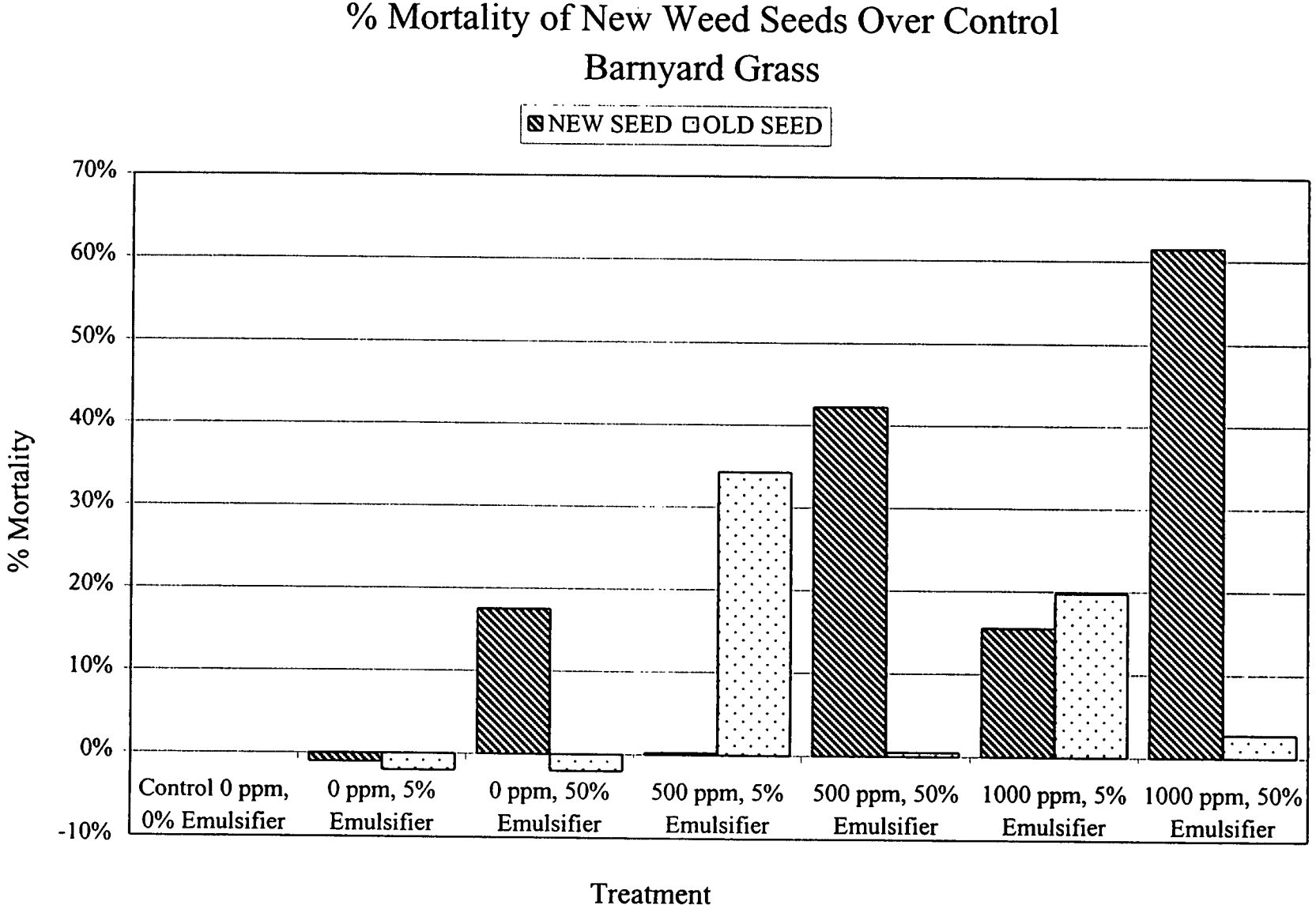
% Mortality of New Weed Seeds Over Control
Barnyard Grass
NEW SEED
OLD SEED
70%
60%
50%
40%
30%
20%
10%
0%
-10%
% Mortality
Control 0 ppm, 0% Emulsifier
0 ppm, 5% Emulsifier
0 ppm, 50% Emulsifier
500 ppm, 5% Emulsifier
500 ppm, 50% Emulsifier
1000 ppm, 5% Emulsifier
1000 ppm, 50% Emulsifier
Treatment

FIG. 10b

Chloropicrin EC - Lab Tests for Weed Seed Mortality
YELLOW SWEET
CLOVER

Weed Seed: *Melilotus indica* Treatment Date = 10/28/1999 Number of Seeds/Dish = 100

		Seed Germination Counts								(% Mortality)											
		Date of Count = 11/05/1999 Elapsed Time from Treatment = 8 Days				Date of Count = 11/09/1999 Elapsed Time from Treatment = 12 Days															
Treatment		1st Count				2nd Count				1st Count				1st Count at 8 Days	2nd Count				2nd Count at 12 Days	% Mortality Above Control
Seed Age	Treatment Solution	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Mean	Rep 1	Rep 2	Rep 3	Rep 4	Mean	
NEW SEED	Control 0 ppm, 0% Emulsifier	15	8	10	8	22	10	10	8	85%	92%	90%	92%	90%	78%	90%	90%	92%	88%	0%
NEW SEED	0 ppm, 5% Emulsifier	12	17	14	5	14	18	17	7	88%	83%	86%	95%	88%	86%	82%	83%	93%	86%	-2%
NEW SEED	0 ppm, 50% Emulsifier	28	24	23	20	29	33	30	20	72%	76%	77%	80%	76%	71%	67%	70%	80%	72%	-16%
NEW SEED	500 ppm, 5% Emulsifier	25	5	0	8	25	5	0	8	75%	95%	100%	92%	91%	75%	95%	100%	92%	91%	3%
NEW SEED	500 ppm, 50% Emulsifier	5	2	3	2	5	2	3	2	95%	98%	97%	98%	97%	95%	98%	97%	98%	97%	10%
NEW SEED	1000 ppm, 5% Emulsifier	1	11	0	4	1	11	0	4	99%	89%	100%	96%	96%	99%	89%	100%	96%	96%	9%
NEW SEED	1000 ppm, 50% Emulsifier	3	0	0	0	3	0	0	0	97%	100%	100%	100%	99%	97%	100%	100%	100%	99%	12%
		Date of Count = 11/08/1999 Elapsed Time from Treatment = 11 Days																		
OLD SEED	Control 0 ppm, 0% Emulsifier	4	3	3	4	4	3	3	4	96%	97%	97%	96%	97%	96%	97%	97%	96%	97%	0%
OLD SEED	0 ppm, 5% Emulsifier	7	12	12	7	7	12	12	7	93%	88%	88%	93%	91%	93%	88%	88%	93%	91%	-6%
OLD SEED	0 ppm, 50% Emulsifier	3	1	2	3	3	1	3	7	97%	99%	98%	97%	98%	97%	99%	97%	93%	97%	0%
OLD SEED	500 ppm, 5% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	4%
OLD SEED	500 ppm, 50% Emulsifier	1	0	12	0	1	0	12	0	99%	100%	88%	100%	97%	99%	100%	88%	100%	97%	0%
OLD SEED	1000 ppm, 5% Emulsifier	0	0	0	0	3	3	5	0	100%	100%	100%	100%	100%	97%	97%	95%	100%	97%	1%
OLD SEED	1000 ppm, 50% Emulsifier	0	0	0	0	0	0	0	0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	4%

NEW SEED
Anova: Single Factor

SIGNIFICANT DIFFERENCE @ 99%

SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	4	3.5	0.875	0.0041
Row 2	4	3.44	0.86	0.00246667
Row 3	4	2.88	0.72	0.00313333
Row 4	4	3.62	0.905	0.01176667
Row 5	4	3.88	0.97	0.0002
Row 6	4	3.84	0.96	0.00246667
Row 7	4	3.97	0.9925	0.000225

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.20665	6	0.0344417	9.89770783	3.156E-05	3.8117491
Within Groups	0.073075	21	0.0034798			
Total	0.279725	27				

OLD SEED
Anova: Single Factor

SIGNIFICANT DIFFERENCE @ 99%

SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	4	3.86	0.965	3.33333E-05
Row 2	4	3.62	0.905	0.000833333
Row 3	4	3.86	0.965	0.000633333
Row 4	4	4	1	0
Row 5	4	3.87	0.9675	0.003425
Row 6	4	3.89	0.9725	0.000425
Row 7	4	4	1	0

ANOVA

Source of Vari	SS	df	MS	F	P-value	F crit
Between	0.024221	6	0.004037	5.281931464	0.001861	3.811749
Within Gr	0.01605	21	0.000764			
Total	0.040271	27				

FIG. 9a

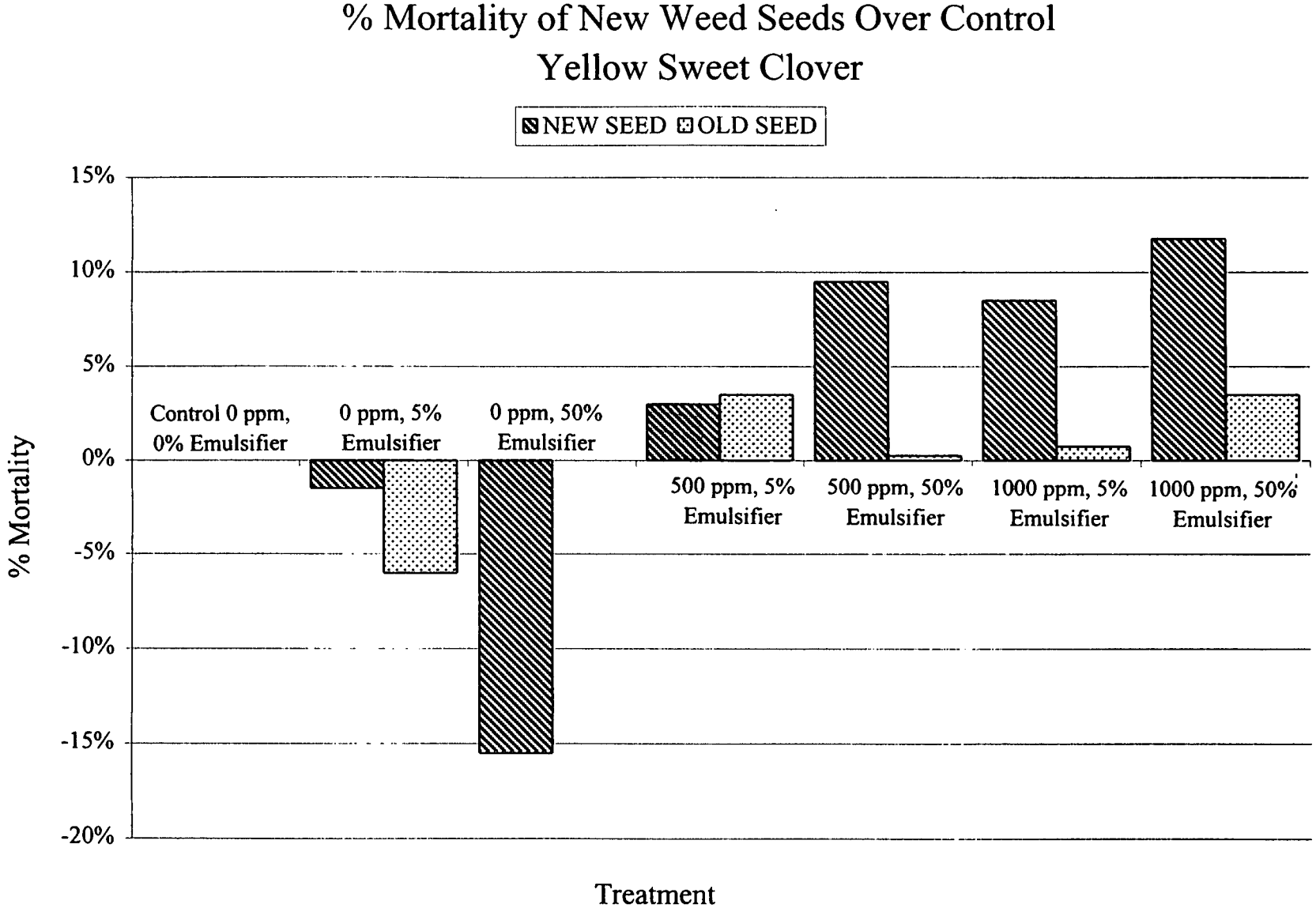
% Mortality of New Weed Seeds Over Control
Yellow Sweet Clover
NEW SEED
OLD SEED
15%
10%
5%
0%
-5%
-10%
-15%
-20%
% Mortality
Control 0 ppm, 0% Emulsifier
0 ppm, 5% Emulsifier
0 ppm, 50% Emulsifier
500 ppm, 5% Emulsifier
500 ppm, 50% Emulsifier
1000 ppm, 5% Emulsifier
1000 ppm, 50% Emulsifier
Treatment

FIG. 9b

Chloropicrin EC - Lab Tests for Weed Seed Mortality

BARNYARD GRASS

Weed Seed: Echinochloa crusgalli   Treatment Date = 10/28/1999   Number of Seeds/Dish = 100

		Seed Germination Counts								(% Mortality)												
		Date of Count = 11/05/1999, Elapsed Time from Treatment = 8 Days				Date of Count = 11/09/1999, Elapsed Time from Treatment = 12 Days																
	Treatment	1st Count				2nd Count				1st Count				1st Count at 8 Days	2nd Count				2nd Count at 12 Days	% Mortality Above Control
Seed Age	Treatment Solution	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Mean	Rep 1	Rep 2	Rep 3	Rep 4	Mean	
NEW SEED	Control 0 ppm, 0% Emulsifier	100	100	88	41	100	100	94	82	0%	0%	12%	59%	18%	0%	0%	6%	18%	6%	0%
NEW SEED	0 ppm, 5% Emulsifier	10	98	97	99	80	100	100	100	90%	2%	3%	1%	24%	20%	0%	0%	0%	5%	-1%
NEW SEED	0 ppm, 50% Emulsifier	95	100	15	90	97	100	15	94	5%	0%	85%	10%	25%	3%	0%	85%	6%	24%	18%
NEW SEED	500 ppm, 5% Emulsifier	43	90	89	79	100	97	90	88	57%	10%	11%	21%	25%	0%	3%	10%	12%	6%	0%
NEW SEED	500 ppm, 50% Emulsifier	31	6	15	100	59	23	25	100	69%	94%	85%	0%	62%	41%	77%	75%	0%	48%	42%
NEW SEED	1000 ppm, 5% Emulsifier	24	89	95	98	31	93	95	95	95%	95%	5%	2%	49%	69%	7%	5%	5%	22%	16%
NEW SEED	1000 ppm, 50% Emulsifier	42	6	12	32	81	8	7	34	58%	94%	88%	68%	77%	19%	92%	93%	66%	68%	62%
		Date of Count = 11/08/1999, Elapsed Time from Treatment = 11 Days																		
OLD SEED	Control 0 ppm, 0% Emulsifier	80	95	100	100	95	97	100	100	20%	5%	0%	0%	6%	5%	3%	0%	0%	2%	0%
OLD SEED	0 ppm, 5% Emulsifier	100	100	100	100	100	100	100	100	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%
OLD SEED	0 ppm, 50% Emulsifier	97	93	99	100	100	100	100	100	3%	7%	1%	0%	3%	0%	0%	0%	0%	0%	-2%
OLD SEED	500 ppm, 5% Emulsifier	50	93	95	9	50	93	95	17	50%	7%	5%	91%	38%	50%	7%	5%	83%	36%	34%
OLD SEED	500 ppm, 50% Emulsifier	99	98	89	92	100	100	95	95	1%	2%	11%	8%	6%	0%	0%	5%	5%	3%	1%
OLD SEED	1000 ppm, 5% Emulsifier	46	100	98	20	85	100	100	28	54%	0%	2%	80%	34%	15%	0%	0%	72%	22%	20%
OLD SEED	1000 ppm, 50% Emulsifier	93	88	82	90	99	94	95	93	7%	12%	18%	10%	12%	1%	6%	5%	7%	5%	3%
																				53%

NEW SEED

Anova: Single Factor

SIGNIFICANT DIFFERENCE @ 99%

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Row 1	4	0.24	0.06	0.0072
Row 2	4	0.2	0.05	0.01
Row 3	4	0.94	0.235	0.1687
Row 4	4	0.25	0.0625	0.003225
Row 5	4	1.93	0.4825	0.13075833
Row 6	4	0.86	0.215	0.10036667
Row 7	4	2.7	0.675	0.12016667

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.3890357	6	0.231506	2.99868928	0.0281763	2.5727118
Within Groups	1.62125	21	0.0772024			
Total	3.0102857	27				

OLD SEED

Anova: Single Factor

No Significance

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Row 1	4	0.08	0.02	0.0006
Row 2	4	0	0	0
Row 3	4	0	0	0
Row 4	4	1.45	0.3625	0.140225
Row 5	4	0.1	0.025	0.000833333
Row 6	4	0.87	0.2175	0.117225
Row 7	4	0.19	0.0475	0.000691667

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.469543	6	0.078257	2.110372725	0.095145	2.572712
Within Groups	0.778725	21	0.037082			
Total	1.248268	27				

FIG. 10a

Chloropicrin EC - Lab Tests for Weed Seed Mortality

BINDWEED

Weed Seed: *Convolvulus arvensis* Treatment Date = 10/28/1999 Number of Seeds/Dish = 100

		Seed Germination Counts								(% Mortality)											
		Date of Count = 11/05/1999; Elapsed Time from Treatment = 8 Days				Date of Count = 11/09/1999; Elapsed Time from Treatment = 12 Days															
	Treatment	1st Count				2nd Count				1st Count				1st Count at 8 Days	2nd Count				2nd Count at 12 Days	% Mortality Above Control
Seed Age	Treatment Solution	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Rep 1	Rep 2	Rep 3	Rep 4	Mean	Rep 1	Rep 2	Rep 3	Rep 4	Mean	
NEW SEED	Control 0 ppm, 0% Emulsifier	15	20	23	28	80	84	83	78	85%	80%	77%	72%	79%	20%	16%	17%	22%	19%	0%
NEW SEED	0 ppm, 5% Emulsifier	16	22	23	14	29	29	27	18	84%	78%	77%	86%	81%	71%	71%	73%	82%	74%	56%
NEW SEED	0 ppm, 50% Emulsifier	19	15	15	16	51	63	55	65	81%	85%	85%	84%	84%	49%	37%	45%	35%	42%	23%
NEW SEED	500 ppm, 5% Emulsifier	12	16	14	7	54	63	55	65	88%	84%	86%	93%	88%	46%	37%	45%	35%	41%	22%
NEW SEED	500 ppm, 50% Emulsifier	25	13	22	17	62	13	74	56	75%	87%	78%	83%	81%	38%	87%	26%	44%	49%	30%
NEW SEED	1000 ppm, 5% Emulsifier	8	15	5	12	14	20	10	16	92%	85%	95%	88%	90%	86%	80%	90%	84%	85%	66%
NEW SEED	1000 ppm, 50% Emulsifier	5	8	3	4	7	15	7	10	95%	92%	97%	96%	95%	93%	85%	93%	90%	90%	72%
OLD SEED	Control 0 ppm, 0% Emulsifier																			
OLD SEED	0 ppm, 5% Emulsifier																			
OLD SEED	0 ppm, 50% Emulsifier																			
OLD SEED	500 ppm, 5% Emulsifier																			
OLD SEED	500 ppm, 50% Emulsifier																			
OLD SEED	1000 ppm, 5% Emulsifier																			
OLD SEED	1000 ppm, 50% Emulsifier																			

NEW SEED

Anova: Single Factor

SIGNIFICANT DIFFERENCE @ 99%

SUMMARY

Groups	Count	Sum	Average	Variance
Row 1	4	0.75	0.1875	0.00075833
Row 2	4	2.97	0.7425	0.00275833
Row 3	4	1.66	0.415	0.00438667
Row 4	4	1.63	0.4075	0.00309167
Row 5	4	1.95	0.4875	0.070625
Row 6	4	3.4	0.85	0.00173333
Row 7	4	3.61	0.9025	0.001425

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.6890214	6	0.2815036	23.2487464	2.966E-08	3.8117491
Within Groups	0.254275	21	0.0121083			
Total	1.9432964	27				

FIG. 11a

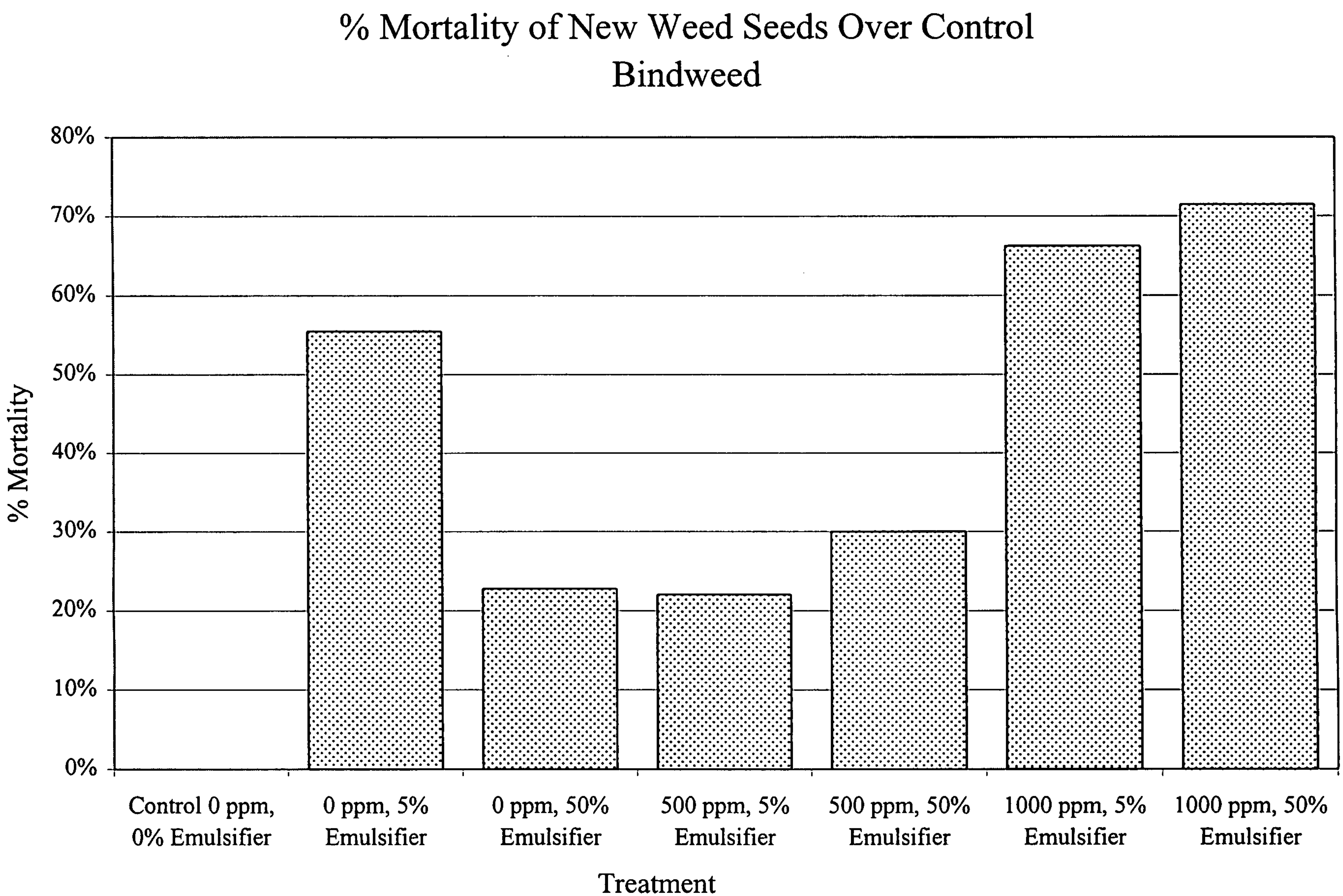

FIG. 11b